

**ABSTRACT**

In one aspect, the invention provides an architecture and query and processing methodology, advantageously implemented in software, for an information technology platform using Intelligent Molecular Objects or objects of a more general character. In another aspect, it provides intelligent molecular object data or other data for heterogeneous data environments with high data density and dynamic application needs. In yet another, it provides an Object State Engine for intelligent molecular object data technology. In still another, it provides an Object Translation Engine for intelligent molecular object data in heterogeneous data environments with dynamic application needs. In yet another aspect, it provides a handling device including an Intelligent Object Handler for intelligent molecular object data in heterogeneous data environments with high data density and dynamic application needs. In even still another aspect, the invention provides a data pool architecture and an Intelligent Object Pool for intelligent molecular object data in heterogeneous data environments with high data density and dynamic application needs. An architecture for an information technology platform using Intelligent Molecular Object software is provided, which addresses all steps of data processing from data acquisition through diverse sources and instrumentation to final output of diverse data analysis results.

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